Notice of Allowability	Application No.	Applicant(s)	
	10/521,637 Examiner	CLEMENTS ET AL. Art Unit	
	Theresa Trieu	3748	
The MAILING DATE of this communication apportunity and the claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT R of the Office or upon petition by the applicant. See 37 CFR 1.313	(OR REMAINS) CLOSED in this ( ) or other appropriate communicat (IGHTS). This application is subjection in the communication in the com	application. If not included ion will be mailed in due course. THIS	
1. 🔀 This communication is responsive to the applicants' amen	dmnet filed on Jan. 31. 2007.		
2. The allowed claim(s) is/are <u>1-20</u> .			
<ul> <li>3. Acknowledgment is made of a claim for foreign priority una.</li> <li>a) All b) Some* c) None of the: <ol> <li>Certified copies of the priority documents have</li> <li>Certified copies of the priority documents have</li> <li>Copies of the certified copies of the priority documents have</li> <li>Topies of the certified copies of the priority documents have</li> <li>Copies of the certified copies of the priority documents have</li> <li>Copies of the certified copies of the priority documents have</li> <li>Tertified copies not received:</li> </ol> </li> <li>Applicant has THREE MONTHS FROM THE "MAILING DATE"</li> </ul>	e been received. e been received in Application No. ocuments have been received in th	nis national stage application from the	
noted below. Failure to timely comply will result in ABANDONN THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.  4. A SUBSTITUTE OATH OR DECLARATION must be subm	nitted. Note the attached EXAMINE		
INFORMAL PATENT APPLICATION (PTO-152) which gives 5.  CORRECTED DRAWINGS (as "replacement sheets") must (a) including changes required by the Notice of Draftspers 1) hereto or 2) to Paper No./Mail Date  (b) including changes required by the attached Examiner Paper No./Mail Date  Identifying indicia such as the application number (see 37 CFR 1 each sheet. Replacement sheet(s) should be labeled as such in 6.  DEPOSIT OF and/or INFORMATION about the deposit attached Examiner's comment regarding REQUIREMENT.	st be submitted. son's Patent Drawing Review (PT - 's Amendment / Comment or in the 1.84(c)) should be written on the dra the header according to 37 CFR 1.12 psit of BIOLOGICAL MATERIA	O-948) attached e Office action of wings in the front (not the back) of 21(d). L must be submitted. Note the	
Attachment(s) 1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)		ary (PTO-413),	
3.	7. ⊠ Examiner's Amer 8. ⊠ Examiner's State	Paper No./Mail Date  7. ⊠ Examiner's Amendment/Comment  8. ⊠ Examiner's Statement of Reasons for Allowance	
	9.	Theresa Trieu Primary Examiner Art Unit: 3748	

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## **EXAMINER'S AMENDMENT**

This Office Action is responsive to the applicant's amendment filed on Jan. 31, 2007

Claim 7 has been amended. Claims 18-20 have been added. Thus, claims 1-20 are pending in this application.

## Specification

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Therefore, the abstract filed on Jan. 19, 2005 is in an improper format (see MPEP §714+ and §1302.04). However, the Examiner has entered a new abstract with a proper format in the Examiner's Amendment to move this case forward (see attached).

Abstract (Currently Amended):

-- A bearing assembly is provided for a fuel delivery system that includes a pump (10) having a housing that rotatably receives a rotor (20) carrying vanes (26) thereon, a cam ring (70) received between the housing and rotor (20), and a support member of yoke (50) encompassing the cam ring (70) to selectively vary fuel flow. The bearing assembly (80) is a journal bearing between the yoke (50) and the cam ring (70) and includes an annular surface having a central opening therethrough. The annular surface includes a first, high pressure pad (102) and a second, low pressure pad (104) substantially diametrically opposite the first pad and separated by first and second lands (106, 108). The circumferential extent of the first pad (102) is at least as great as an inner diameter of the cam ring (70). Circumferential ends of the second pad (104) are wider than circumferential ends of the first pad. The first and second pads (102, 104) are formed by circumferentially extending grooves that extend an entire width of the bearing so that the cam ring moves between the first and second pads, and thereby varies a clearance between the lands (106, 108) and the cam ring (70) .--

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# Allowable Subject Matter

Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1 and 7: As pointed out by applicant's amendment and applicant's argument (see remarks section page 6-7), the cited references fail to disclose or render obvious the claimed combination including the hydrostatic/hydrodynamic bearing including a first high pressure pad and second low pressure pad that are substantially diametrically opposite one another and separated by first and second lands to center the cam ring during operation.

Regarding claim 18: the dependent claim 13 has been rewritten in independent form including all the limitations of the base claim and any intervening claim as new claim 18; therefore, claim 18 is allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 571-272-4868. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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TT April 15, 2007 Theresa Trieu Primary Examiner Art Unit 3748

## **Abstract**

A bearing assembly is provided for a fuel delivery system that includes a pump (10) having a housing that rotatably receives a rotor (20) carrying vanes (26) thereon, a cam ring (70) received between the housing and rotor (20), and a support member of yoke (50) encompassing the cam ring (70) to selectively vary fuel flow. The bearing assembly (80) is a journal bearing between the yoke (50) and the cam ring (70) and includes an annular surface having a central opening therethrough. The annular surface includes a first, high pressure pad (102) and a second, low pressure pad (104) substantially diametrically opposite the first pad and separated by first and second lands (106, 108). The circumferential extent of the first pad (102) is at least as great as an inner diameter of the cam ring (70). Circumferential ends of the second pad (104) are wider than circumferential ends of the first pad. The first and second pads (102, 104) are formed by circumferentially extending grooves that extend an entire width of the bearing so that the cam ring moves between the first and second pads, and thereby varies a clearance between the lands (106, 108) and the cam ring (70).

#### Abstract

A bearing assembly is provided for a fuel delivery system that includes a pump (10) having a housing that rotatably receives a rotor (20) carrying vanes (26) thereon, a cam ring (70) received between the housing and rotor (20), and a support member of yoke (50) encompassing the cam ring (70) to selectively vary fuel flow. The bearing assembly (80) is a journal bearing between the yoke (50) and the cam ring (70) and includes an annular surface having a central opening therethrough. The annular surface includes a first, high pressure pad (102) and a second, low pressure pad (104) substantially diametrically opposite the first pad and separated by first and second lands (106, 108). The circumferential extent of the first pad (102) is at least as great as an inner diameter of the cam ring (70). Circumferential ends of the second pad (104) are wider than circumferential ends of the first pad. The first and second pads (102, 104) are formed by circumferentially extending grooves that extend an entire width of the bearing so that the cam ring moves between the first and second pads, and thereby varies a clearance between the lands (106, 108) and the cam ring (70).